

## Claims

1. A method for the thermal treatment of granular solids in a reactor (1) with a swirl chamber (4), which in particular constitutes an flash reactor or suspension reactor, wherein microwave radiation from a microwave source (2) is fed into the reactor (1) through a wave guide, **characterized in that** the wave guide constitutes a gas supply tube (3) and that through the gas supply tube (3) a gas stream is additionally fed into the swirl chamber (4).
2. The method as claimed in claim 1, **characterized in that** the gas stream introduced through the gas supply tube (3) is utilized for an additional fluidization of the fluidized bed formed in the swirl chamber (4).
3. The method as claimed in any of claims 1 or 2, **characterized in that** by means of the gas stream introduced into the gas supply tube (3) solid deposits in the gas supply tube (3) are avoided.
4. The method as claimed in any of the preceding claims, **characterized in that** the used frequency of the microwave radiation lies between 300 MHz and 30 GHz, preferably at the frequencies 435 MHz, 915 MHz and 2.45 GHz.
5. The method as claimed in any of the preceding claims, **characterized in that** the temperatures in the reactor (1) lie between 150°C and 1200°C.
6. A plant for the thermal treatment of granular solids, in particular for performing the method as claimed in any of claims 1 to 5, comprising a reactor (1) with swirl chamber (4), which in particular constitutes an flash reactor or suspension reactor, a microwave source (2) disposed outside the reactor (1), and a wave guide for feeding microwave radiation into the reactor (1), **characterized**

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**in that** the wave guide constitutes a gas supply tube (3) through which a gas stream can additionally be fed into the swirl chamber (4).

5        7.        The plant as claimed in claim 6, **characterized in that** the gas supply tube (3) has a rectangular or round cross-section whose dimensions are adjusted in particular to the used frequency of the microwave radiation.

8.        The plant as claimed in claim 6 or 7, **characterized in that** the gas supply tube (3) has a length of 0.1 m to 10 m.

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